Art 34 Amdt.

CLAIMS:

1. Pneumatically actuated disc brake, having

a) a caliper (2) encompassing a brake disc (3),

b) at least one application device (15) arranged in the caliper on one side of the brake disc, for the application of a brake, which preferably has a rotary lever (4),

c) at least one or more adjusting device(s) (7,8) for the compensation of brake pad wear, which has or have at least one electromotive drive (9, 10),

characterized in that

d) the at least one electromotively driven adjusting device (7,8) is designed such that it can be used as a parking and/or emergency brake,

e) the electromotive drive - an electric motor (9,10) - of the adjusting device is dimensioned such that it can be used as a parking and/or emergency brake.

2. Disc brake according to Claim 2 (1?),
characterized in that the additional mechanical components of the adjusting device (7,8) are dimensioned such that it can be used as a parking and/or emergency brake.

3. Disc brake according to one of the preceding claims,

characterized in that the electrical/electronic elements for the adjusting device(s) are designed for the use of the adjusting devices as a parking and/or emergency brake.

4. Disc brake according to one of the preceding claims, characterized in that at least one, preferably two of the adjusting devices (7,8) are arranged on each side of the brake disc (3).

5. Disc brake according to Claim 5 (4?), characterized in that, of the adjusting devices (7,8) on both sides of the disc brake, only one is designed for the implementation of the parking and/or emergency braking function.

6. Disc brake according to one of the preceding claims, characterized in that, for the implementation of the parking and/or emergency braking function, the adjusting device (7,8) is designed on the actuation side of the brake.

7. Disc brake according to one of the preceding claims, characterized in that the electric motor (9,10) is accommodated in or on, particularly under the caliper and, by way of a coupling gear (16,17) engages in the transmission gearing.

8. Disc brake according to one of the preceding claims, characterized by a control device with a control program which is

designed for implementing the parking and/or emergency braking function by means of at least one of the adjusting devices.

9. Method of controlling a pneumatically actuated disc brake, particularly according to one of the preceding claims, characterized in that the parking and/or emergency braking function is implemented by using the electromotive adjusting device (7,8).

10. Method according to Claim 9,
characterized in that, when the parking brake is actuated, the pressure in the service brake cylinder is reduced at least temporarily.

11. Method according to Claim 9 or 10,
characterized in that, for determining the pressure of the service brake cylinders required for the temporary stopping of the vehicle, information from gradient sensors and/or other information present in the electronic braking system is used.

12. Method according to one of the preceding Claims 9 to 11,
characterized in that the information comprises changes of the output signal of axle load sensors when driving on gradients and/or stored data of the preceding stopping operation on the gradient, such as the brake pressure or the achieved

deceleration.

13. Method according to one of one of the preceding Claims 9 to 12,

characterized in that, for reducing the power demand of the electromotive drive of the adjusting device for implementing the parking and/or emergency brake, the brake cylinder pressure is reduced only at individual wheels, for example, for each axle or wheel, and, after the engaging of the parking brake at this wheel or at the wheels of this axle, the brake pressure at these wheels is raised again and in this manner the parking brake is engaged successively at the different axles or wheels of the vehicle.

14. Method according to one of the preceding Claims 9 to 13,

characterized in that, for controlling the parking and/or emergency brake, an electric desired-value signal is generated by means of an operating element operable by the driver or by an electronic control device by means of the signals of gradient and/or force sensors, and this desired value is converted in the brake-integrated control to an adjusting path of the adjusting screws, this adjusting path being dimensioned such that a defined spreading-open of the caliper is adjusted which corresponds to the tension force of the caliper which is necessary for achieving the defined desired value.

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15. Method of one of the preceding Claims 9 to 14, characterized in that a desired-value definition is obtained from the signal of a pressure sensor for controlling the parking and/or emergency brake in the case of vehicles which are equipped only on one axle with an integrated electromotive parking and/or emergency brake and with conventional spring brakes on the driving axle, which pressure sensor detects the pressure acting upon the spring brakes.

16. Method according to one of the preceding Claims 9 to 15,
characterized in that, in the case of disc brakes with a wear adjustment on both sides, the parking and/or emergency braking function is generated only on one side of the brake, preferably the actuation side.

17. Method according to one of the preceding Claims 9 to 16,
characterized in that, in the case of disc brakes with a wear adjustment on both sides, the second adjusting device not required when engaging the parking and/or emergency brake is controlled for reducing the release play and thus also for reducing the application stroke of the first adjusting device.

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